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ABSTRACT

This study was conducted in order to assess the link between exposure to television advertising for snack foods and children's actual snack choices. One hundred and forty 5-to 8-year-old low income children attending summer camp were randomly divided into two experimental groups each of which contained equal numbers of younger and older children. All children viewed a half hour videotaped cartoon program each day for a period of two weeks. One group of children viewed 4 1/2 minutes of fruit commercials during the half-hour program while the other group viewed 4 1/2 minutes of candy commercials during the program. The children's snack selections from among a carefully structured set of candy and fruit options were recorded each day. Results indicated that after two weeks of viewing fruit commercials, as exposed to candy commercials, the children chose more fruit than candy for afternoon snack at a summer camp. A second study, with twenty-six 8 to 10-year-old boys was conducted to assess whether TV exposure to fruit or candy affects the frame of reference children have when assessing food choices. Results suggest that making fruit more salient through TV exposure seemed to broaden the children's frame of reference. With fruit as a salient anchor, children were more likely to categorize candy bars together and see them as similar. This study suggests that given a sensitive enough dependent measure one can detect a TV induced shift in children's inclination to use nutrition as at least one dimension for snack selection. (Author/MP)

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TV'S INFLUENCE ON CHILDREN: THE LONG AND THE SHORT OF IT

ABSTRACT

This paper reports on an extended field experiment. At a summer camp, children were exposed to a half-hour of TV each day, with 4-1/2 minutes of either candy or fruit commercials for a period of two weeks. Each day their snack selections from amongst a carefully structured set of candy and fruit options were recorded. Two weeks of viewing fruit commercials, as opposed to typical TV fare with candy commercials led 5-8 year old kids to pick more fruit than candy for afternoon snacks at a summer camp. A second study assessed whether TV exposure to fruit or candy affects the frame of reference children have when assessing food choices. The results suggested that making fruit more salient through TV exposure seemed to broaden the child's frame of reference. With fruit as a salient anchor, the child was more likely to lump candy bars together as being similar.

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TV'S INFLUENCE ON CHILDREN: THE LONG AND THE SHORT OF IT

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What methodology is most likely to generate maximal insight into a given phenomenon? The answer seems conditional upon the particular type of phenomenon in question. Correlational research (cross sectional or longitudinal) represents one way of assessing consistent enduring patterns of behavior such as those associated with TV advertising directed at children. Considerable research examining the effects of TV advertising on children has adopted a correlational paradigm. Correlation can capture relevant variables in a way that recognizes the importance of their development over time. The difficulty of course is that drawing causal inference is difficult given a lack of control. With correlation, eliminating the possible causal role of alternative factors proves very complicated.

Experimental designs provide an alternative approach. Unfortunately, with few exceptions those assessing the link between TV advertising and children have been extremely short term. These often "one shot" designs can perhaps reflect temporary changes in belief, attitudes or even intentions. However, they are unlikely to detect shifts in consistent patterns of behavior such as family interaction, child values etc. Extending the duration of an experiment, particularly a field experiment can represent a step forward in establishing a valid understanding of cause-effect relationships. This paper reports on one such extended field experiment. At a summer camp, children were exposed to a half-hour of TV each day, with 4 1/2 minutes of either candy or fruit commercials for a period of two weeks. Each day their snack selections from amongst a carefully structured set of candy and fruit options were recorded. Of course, two weeks is hardly "long term" in the course of a child's life. However it may be appropriate to study some behaviors where relatively short term effects may be observable. For example, regarding children's snacking behavior, a child may often leave a TV during or between programs heading directly to the refrigerator or cupboard in search of a snack. In such situations he may be influenced by what he has just seen, or recently seen on TV. It should be noted that for most other kinds of TV related outcomes (for example family conflict, child values etc) two weeks is very short term. More viable than extending a study for longer and longer periods of time, so as to approximate reality, is the search for important and sensitive intervening variables that are likely to serve as valid indicators of long term changes in the child's behavior patterns. A second experiment attempted to pursue this strategy.

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The set of alternatives a child conjures up in his mind when considering a snack seems to represent a useful early indicator of what he might ultimately choose. A serious contention by nutritionist Gussow (1972) has been the notion that

the omnipresence of TV messages for candies heightens their salience. Going further, the relative absence of messages for alternative snacks such as fruit may further contribute to an environment in which various candies are not only more salient, but the (often minimal) differences between them become magnified, given all the attention they receive. In this study we attempted to look into this issue and to link changes in the child's frame of reference to changes in his TV viewing experience.

Summer Camp Field Experiment

This study was conducted to assess the link between exposure to TV advertising for snack foods and children's actual snack food choices. The study was conducted during summer 1979 at a camp for low income children in Quebec. In the session in question, about 140 children were grouped into about twelve "cabins". The cabins were divided randomly into two experimental "groups" (taking age into consideration, with equal numbers of younger and older children in each group). All the children viewed a half hour videotaped cartoon program on 26" color TV monitors each afternoon during their "quiet period". For half the children (one "group") each program had 4 1/2 minutes of fruit commercials; for the other half each program had 4 1/2 minutes of candy commercials. Following the program, the children were offered a choice of snacks. They could pick two snacks out of a total of four offered: there were two candy (e.g. Hershey bar and Jelly beans) and two fruit (e.g. pear and peach) alternatives. We recorded their choices and then analyzed the percentage of times each fruit was selected. Typically, when a choice (candy or fruit) was offered to the children, it had been "advertised" once on each of the three preceding days, as well as on the day it was made available. Table 1 provides the average percentage of times a given fruit was selected when offered. (Some fruits were offered four times, others just twice across the fourteen days).

TABLE 1

Percentage of Times Fruit Selected

Groups Exposed to...Commercials

	CANDY (n=78)	FRUIT (n=78)	NUMBER OF TIMES FRUIT WAS OFFERED
Banana*	.17[A]	.27	4
Peach**	.18	.28	2
Apple	.25	.27	4
Pear**	.13	.23	2
Orange*	.11	.20	4
Grapes**	.36	.45	4
Raisins	.20	.27	4
Plum	.25	.33	2
Yogurt**	.33	.44	2
TOTAL*	.22	.30	28

*Difference between two groups statistically significant ($p < .05$)
**Difference between two groups approaching statistical significance ($p < .10$)

[A]Read: Of the four times a banana was offered to the children they selected it on average 17% of the time in the candy group and 27% of the time in the fruit group.

Two weeks of viewing fruit commercials, as opposed to typical TV fare with candy commercials led 5-8 year old kids to pick more fruit than candy for afternoon snacks at a summer camp. Statistical significance was achieved for many of the fruits considered individually and the tendency was universal: with all nine of the fruits in question, children viewing the fruit commercials selected more fruit than did those viewing the candy commercials. When all the fruits are added up, the proportion of fruits (versus candy) selected among those viewing fruit commercials was significantly higher.

Frame of Reference Experiment

A cub scout group of 26 eight to ten year old boys participated in this pre-post study. The boys were first asked a series of questions, ("control" condition) and then one week later they saw 5 minutes of TV with four 30 second commercials; two different commercials for one candy bar: two different commercials for a second candy bar. This represented the "commercial" condition. Still another week later they viewed another five minutes of TV, this time containing four commercials for two fruits (fruit condition). The same set of questions posed in the control period were repeated following exposure to the candy and fruit TV messages.

The children were first asked to list the snacks that "popped" into their heads when they thought of what they might request from their mothers after school.

TABLE 2

Proportion of Children Listing Fruit or Candy as Majority of Snack Choices

	Treatment Condition Children Had Been Exposed to		
	Control	Commercial	Fruit
Percentage of Children in Each Category			
Fruit	3.9%	0.0%	19.2%
Candy	73.0	88.5	57.7
Other*	23.1	11.5	23.1

*Other includes milk, cheese, yogurt

As Table 2 suggests, exposure to fruit messages significantly increased the proportion of children listing fruits as a majority of their choices. Thus it does seem that the snacks that "pop" into kid's heads may reflect what they see on TV.

A second set of questions were used to determine whether TV exposure to fruit or candy affects the frame of reference children have when assessing food choices. The children were asked to indicate how similar or different the two candy bars in the commercials were (on a four point scale; "exactly the same" = 1, "very different" = 4). As predicted, the children's scores were significantly lower after exposure to the fruit commercials than before.

Making fruit more salient seems to have broadened their frame of reference, resulting in greater perceived similarity between the two candy bars.

An additional measure suggested that exposure to the fruit messages made nutrition a more salient dimension. The instrument used was a simplified version of Kelly's triad grid (1955) which determines attitudes regarding a class of objects. The four advertised candy bars and fruits were made into combinations of three, to comprise four triads in total. For each triad, the subjects were asked to indicate which of the three stimuli was different from the other two and to write down their reasons. The obvious prediction was made that the odd stimulus (e.g., the candy bar in a triad with the two fruits or the fruit in a triad with the two candy bars) would be designated as different. This was not the main focus of the questions, however, since all children as expected were able to single out the odd stimulus. The reasons for selection were considered of most importance. As predicted subjects gave significantly more nutritional reasons after being exposed to fruit commercials than before.

After being exposed to fruit messages the children were also more inclined to respond that the experimenters ought to buy more fruit rather than candy as snacks for "little kids", ($F=20.34$, $p < .001$). The five point scale ranged from all candy (1); mostly candy; half-half; mostly fruit; all fruit (5). The Tukey test revealed significant differences ($p < .01$) between the fruit ($\bar{x} = 4.01$) and both the control ($\bar{x} = 2.96$) and candy bar ($\bar{x} = 2.71$) conditions. Seemingly, nutritional considerations were more salient when the emphasis was on children younger than themselves and the salience of this dimension was heightened by the fruit messages.

Conclusions

Where actual behavior patterns are the subject of analysis, field studies of an extended duration seem called for. In the summer camp study, two weeks was nevertheless sufficient to document changes in snack choices. Of course, in this instance, the reality that is reflected is itself short term. In the study, children made their snack choices right after viewing the TV program each day. In reality, running to the refrigerator or pantry during or after a TV program is a behavior pattern not uncommon to most of us. However, where the behaviors in question are more complex and of a longer term nature, an experiment may need months if not years to yield the insights sought: "Research that will make a significant contribution to our understanding of the social or cognitive development of children, or any major area of investigation, will take a long time to execute and will require major investments in personnel and resources. Sophisticated exploration of such areas as the environmental influences on the child and family, will require sustained and organized efforts measured in years, not months"(Gallager, 1979).

Of course, given pressures to publish, etc, this is hardly a feasible research approach for most of us most of the time. Consequently research might focus on locating sensitive and significant intervening variables, more easily linked in the sh rt run to causal factors such as TV advertising. The second study reported, suggests that short term cognitive shifts can be obtained by changing what a child sees on TV. Exposure to fruit commercials appears to have heightened the salience of fruit in the children's minds.

One consequence is that the range of snacks the child considers may be considerably altered. In the absence of exposure to alternative snacks (fruit)

small (even trivial) differences among candy products become salient and represent the basis for considerable deliberation and choice. By contrast the introduction of a wider range significantly different alternatives (fruit) may result in the perception of smaller differences among members of similar subsets (candy bars) along the broader continuum. Thus the child may "lump" the candy bars closer together in his mind and generally spend less time dwelling on them.

While most kids may know which foods are "good" of "bad" or "healthy" or "unhealthy", whether this knowledge is salient when considering snack choices is another matter. This study suggests that given a sensitive enough dependent measure (e.g. choice of a snack for a more "vulnerable" younger kid) we can detect a TV induced shift in children's inclination to use nutrition as at least one dimension for snack selection. It is hypothesized that these cognitive shifts would represent precursors of behavioral change, if the TV environment were itself changed to include significant numbers of fruit messages. A broader view of available snacks might encourage children, as they grow older, to choose a broader and perhaps better balance of snacks.

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